

## Press Releases



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# HP Introduces 110GHz Coaxial Single-sweep Vector Network Analyzer

Palo Alto, California. Aug. 1, 1997

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Hewlett-Packard Company today announces a new vector network analyzer (VNA) system that measures from 45MHz to 110GHz in one sweep with a single, 1.0mm coaxial connection. The HP 8510XF will be particularly valuable for design, component-test and wafer-test engineers working in aerospace and defense electronics, military and commercial communications, component manufacturing and the automotive industry.

Using the new system, designers of semiconductors and millimeter-wave integrated circuits (MMICs) can evaluate devices on-wafer more easily and thoroughly by measuring low-frequency and high-frequency performance, as well as in-band and out-of-band characteristics. Engineers pursuing a variety of microwave and millimeter-wave projects (for example, at universities and corporate research centers) can use the new VNA as their primary design tool, instead of relying on multiple single-band systems.

The HP 8510XF addresses the testing requirements of the newest millimeter-wave applications, including automotive collision radar and intelligent cruise control, wireless LAN and short-haul communication links.

The new analyzer's Institute of Electrical and Electronic Engineers (IEEE) standard 1.0mm coaxial connector, mounted directly on the port of each test head, provides the capability for single-sweep, single-connection measurements to 110GHz. Unlike band-limited systems, single-connection measurements do not require the user to set up, connect or disconnect devices under test as measurements move from one frequency band to the next. This saves the engineer time and results in increased productivity.

### On-wafer or Coaxial Configurations

A new test set, which provides easy connection of the analyzer test heads to 1.0mm wafer-probing systems made by Cascade Microtech, Inc., is compatible with most other probing systems. Engineers can use these probing systems to perform fully calibrated measurements from 45MHz to 110GHz with a single touchdown on the wafer. The test set offers added convenience by allowing users to perform coaxial measurements using the same head configuration. In either coaxial or on-wafer configurations, the test heads are mounted close to the device or wafer under test to minimize insertion loss due to cable

length.

The HP 8510XF firmware allows the user to perform a single calibration from 45MHz to 110GHz, either in coax or on-wafer. This broadband calibration can be applied either to broadband or narrowband devices. HP also offers a precision 1.0mm calibration kit, the HP 85059A, for the new VNA.

## Two Versions Now Available

The HP 8510XF is available in two standard configurations: The HP E7340A measures from 2GHz to 85GHz, and the HP E7350A measures from 2GHz to 110GHz. Option 005 extends measurements down to 45MHz. Both systems are integrated and fully tested in coax by HP. If the customer purchases a wafer-probing station from Cascade Microtech, Cascade will test the system through the wafer probes.

Any HP 8510-based system can be upgraded to an HP 8510XF. Depending on the system configuration, the upgrade is either a standard, preconfigured upgrade or a custom upgrade.

## U.S. Prices and Availability

The HP 8510XF is available now with expected delivery of about 18 weeks after receipt of order.

HP E7340A (2GHz to 85GHz)		\$337,000
HP E7350A (2GHz to 110GHz)		382,000
Option 005	45MHz extension	18,000
HP 85059A	1.0mm calibration kit	19,950

## About HP

HP is a leading global provider of computing, Internet and intranet solutions, services, communications products and measurement solutions, all of which are recognized for excellence in quality and support. HP has 114,600 employees and had revenue of \$38.4 billion in its 1996 fiscal year.

Information about HP and its products can be found on the World Wide Web at <http://www.hp.com>.

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# Vector Network Analyzer

## Applications:

The HP 8720C microwave network analyzer is an excellent instrument for measuring the transmission and reflection characteristics of amplifiers and active devices. Scalar parameters such as gain flatness, gain compression, reverse isolation, return loss (SWR) and gain drift can be measured. Additionally, vector parameters such as deviation from linear phase, group delay, complex impedance can also be measured.



## Main Features:

- ⊗ Wide frequency range of 50 MHz to 20 GHz with 1 Hz frequency resolution.
- ⊗ High output power at the test port (+10 dBm) drives high power devices, eliminating the need for external amplifiers.
- ⊗ dB power resolution provides precise control of the input power to the device.
- ⊗ Power sweep (20dB range) allows for convenient gain compression measurements in dBm or mW.
- ⊗ Power meter calibration improves measurement accuracy and provides new capabilities such as absolute output power measurements.
- ⊗ User defined preset function saves set-up time and protects power sensitive devices.

## Instrumentation:

- ⊗ Hewlett Packard HP9122C external disk drive provides on-line data storage capabilities.
- ⊗ Hewlett Packard 85052B 3.5mm calibration kit used for broad band calibration of network analyzer.

**For more information about the equipment or to arrange for its use, call the IEEC at (607) 777-4332**

Comments to webmaster at: [ieec@binghamton.edu](mailto:ieec@binghamton.edu)

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